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Employing Entrepreneurship and Computing to Solve University Housing Problems

Jeremy Pease

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By: Jeremy Pease

Email: Jeremy@jeremypease.com
Graduation Date: May 16, 2012
Major: Computer Science
Advisor: Jonathan Hill, DPS
Department: Computer Science
Pace University

Abstract

Every day, university housing offices are faced with a set of challenging, yet repetitive problems, particularly urban universities like Pace New York. These problems include space allocation, resident and staff management, data storage and accessibility, reporting, the psychological and cultural issues of the student residents, and the age-old challenge of compatible roommates. This thesis will focus on an interdisciplinary, collaborative, and entrepreneurial effort made by students to leverage technology to solve these problems. The purpose is to examine how a student created company, Reslutions Inc., was conceptualized to solve the problems faced by a university's housing office.

This study will involve a literature review of the root causes of these housing problems, the efficacy of student entrepreneurship to drive solutions, and the ability of customized technology solutions to solve these problems. The thesis will go into detail about the different stages of the company, the technology used, and how it solved problems. There will also be an analysis of the areas where Reslutions does not solve problems successfully. A section will be dedicated to a next generation opportunity that Reslutions has become involved in: roommate compatibility. Finally, by exploring the company's future opportunities and several indicators of success, a development plan and forecast of growth will be made.

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I. Introduction

In 1773 Richard Cantillon first described an entrepreneur as someone who "bears the risk of profit or loss" (NCE). Over the past two centuries entrepreneurship has compelled changes in society and evolved to where it is today: a strongly technologically driven ecosystem. Entrepreneurship may then best be defined as "the process of uncovering and developing an opportunity to create value through innovation" (NCE). The following will explore the entrepreneurial experiences of the writer to prove that when students engage in an interdisciplinary, collaborative, and entrepreneurial effort that properly leverages technology, they can solve any unique problem set.

Technology has forever changed the way that people interact, communicate, and solve problems. But why has technology had such a massive impact on nearly every aspect of life? In one aspect, technology helps to restructure processes in such a way that makes them more efficient for everyone involved. The people responsible for creating these technological innovations that utilize computers are software engineers. The use of software and the internet as a means of creating has made some of the most recent modernizations possible. It is in this capacity that I have been able to use my knowledge of software engineering and web development to create value and solve problems.

As a technologist and entrepreneur, the intersection of these two subjects occurs with a combination of experience, problem recognition, and execution of a

solution. At the age of seventeen I began my entrepreneurial experiences by starting a company in which I provided in-home and in-office computer services and repairs. Then, upon beginning my degree in computer science at Pace University, I began working for Pace's Office of Housing and Residential Life (OHRL) as a desk attendant. The following year I became a resident advisor for Pace's OHRL. Through these experiences, I was able to recognize many problems wherein technology could be leveraged. By collaborating with other student resident advisors at Pace to solve these problems, the company Reslutions Inc. was formed.

II. Recognizing the Problems

There were an abundance of inefficiencies and Process issues with Pace's OHRL. These problems were disbursed throughout the entire department, yet at the same time they were all intertwined and interdependent like a complex Rube Goldberg machine. Each problem enabled the other problems to exist and fed into one another.

a. Resident Management

Managing information about each resident is one of Pace's OHRL's main functions. This includes all of the details about each student living in the residence halls (name, building, room number, date of birth, university identification number, etc.). Pace's OHRL was exporting all of this information from their administrative system and printing and emailing spreadsheets for the staff. This resulted in often out of date information and hundreds of pages printed and then thrown away.

b. Guest Management

Having residence halls in Manhattan means that there are increased security concerns for Pace. Hence, the residence halls have fairly strict and detailed guest policies. Pace's OHRL was using desktop software called "TimesUp" in order to sign guests in and out of the buildings. This software had to have each resident added one by one and provided no connectivity to other software or databases. Also, this software did not allow detailed reports or tracking that would allow Pace to enforce their guest policies.

c. Mail and Package Management

Pace's OHRL is in charge of staffing and managing the mailroom for one of their residence halls. Their process for receiving a package consisted of validating the name and room number of the recipient on a paper roster, logging the package into a paper or digital spreadsheet, and placing a paper notice in the recipient's mailbox. This was time consuming, inefficient, and often resulted in misplaced mail and other discrepancies.

d. Paper Forms

Carbon copy paper forms played a vital role in most of procedures for Pace. These included room transfer requests, guest exceptions, resident fine forms, and others. The problems here were overwhelming. These forms were not always readily available, they had to be manually delivered and processed, there was little to no validation of input, they could not be tracked, and were sometimes lost or misplaced.

e. Reporting

In relation to all of the above-mentioned problems, there were numerous flaws in both the informational reporting and the staff reporting needed. Whenever an incident occurred, the resident advisor had to submit an incident report by filling in all of the details on a Word document and emailing it to the appropriate people. This required the resident advisor to store the information on a sometimes publically accessible computer and attach it to an email—both of which are not secure. Furthermore, resident advisors and other staff were required to submit duty reports, weekly reports, and other informational reports. These were done either on paper, via email, or though a web based form. With all of the reporting being done by staff, there was no easy way to process all the data, recognize trends, or do comparisons.

f. Staff Accountability

In any work environment it is important to be able to hold staff accountable. Unfortunately, this was not easily done with Pace's processes and most things relied on "good faith." There was no way to manage how staff accessed and used data, nor was there a way to limit what data staff had access to. The desk attendants for Pace's OHRL were paid hourly and were required to clock in and out at the beginning and end of their shifts. The system used to manage their time did not require the desk attendant to be at their location of work and therefore could record time from anywhere.

g. Data Storage and Accessibility

In its previous state, Pace's OHRL had data stored on paper, in filing cabinets, on personal computers, in email, in local databases, in software, and in web applications. This compilation of fragmented technologies and paper-based systems meant that many related data points were not consistent. Most importantly though, there was no central location (digital or otherwise) to access all of the data.

h. Matching Compatible Roommates

The use of paper forms and manual processing plagued the housing department again when it came to matching roommates. Each student entering housing had to fill out all of their information and answer a short questionnaire about their requests on a sheet of paper. Then Pace's OHRL had to manually sort the hundreds of papers numerous times to arrive at groups of residents that would be living together.

III. The Efficacy of Student Entrepreneurship to Drive Solutions

It takes a certain type of individual to truly be an entrepreneur. According to The National Commission on Entrepreneurship, entrepreneurs have the following characteristics: vision, adaptability, persuasiveness, confidence, competitiveness, risk-taking, honesty, perseverance, discipline, organization, and understanding. Some college students easily have all of these characteristics and thus may be a good fit. Some of the most successful companies were started by students or people in their 20s. This includes Facebook. Microsoft, Google, RIM, and Groupon (Livneh).

But, just how efficient are student entrepreneurs at driving solutions and what makes them more qualified?

"Until recently, fostering innovations and new product development through entrepreneurship has not been regarded as a primary task of universities" (Lüthje & Franke 1). The current higher education system in the United States is becoming more focused on intentionally producing active entrepreneurs. Many different components come into play that enable and encourage students to be entrepreneurs.

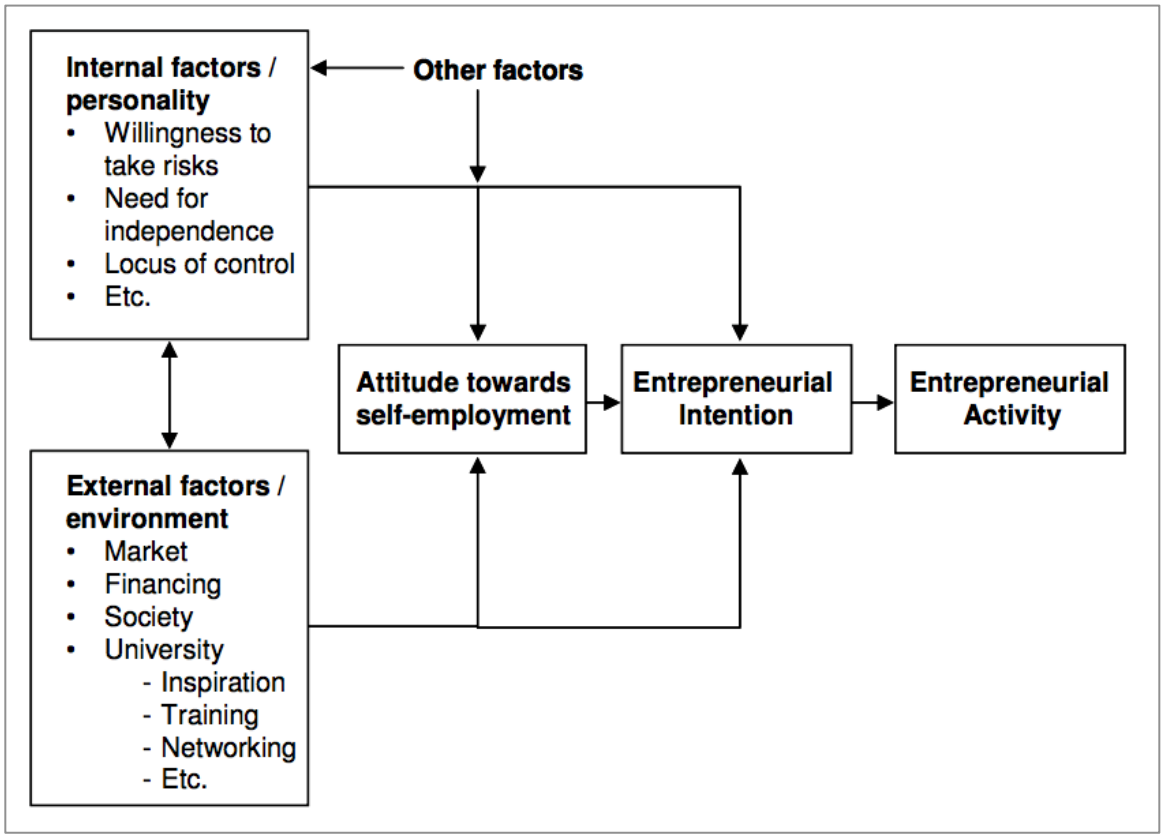


Figure 1

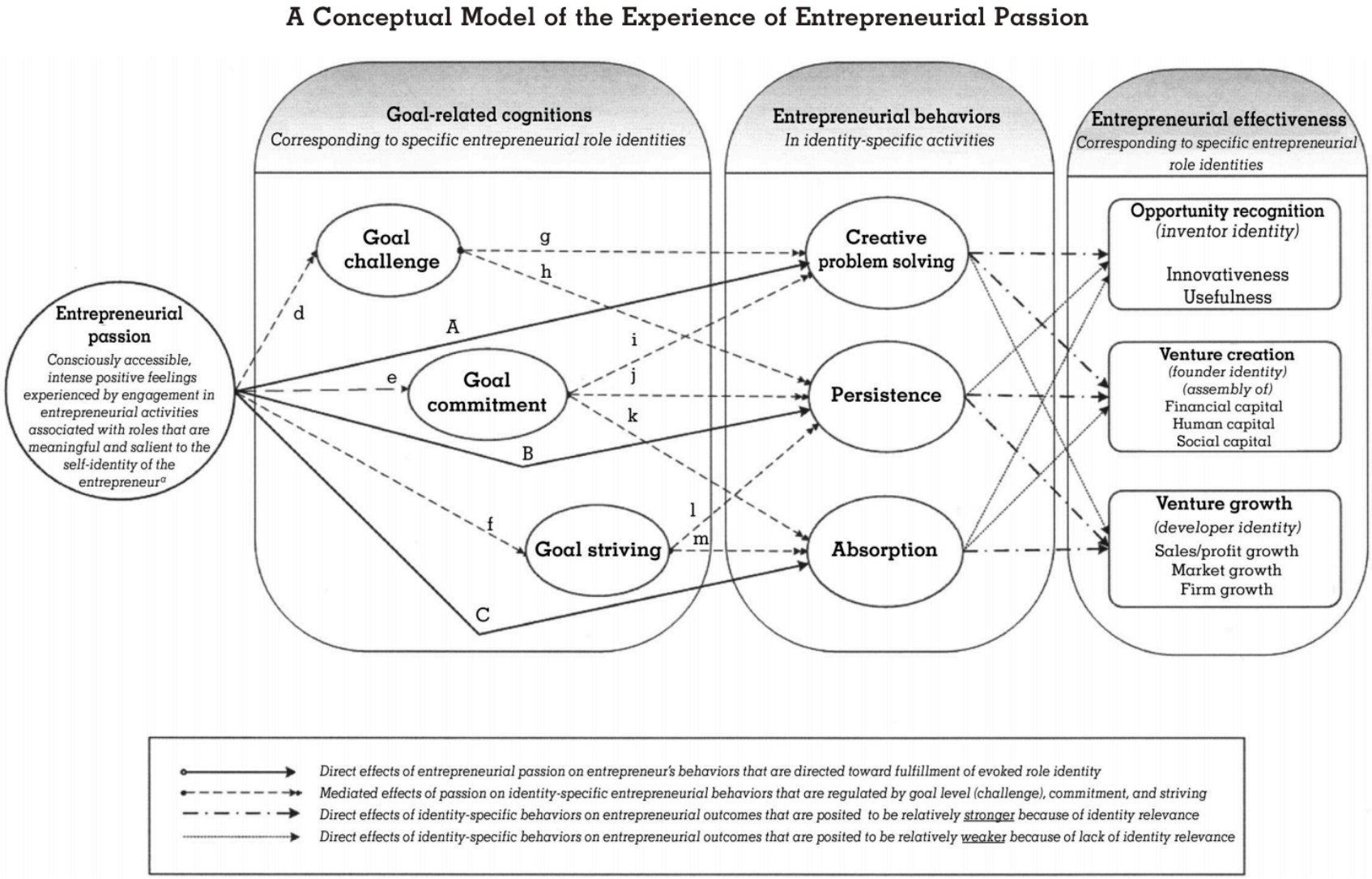
In the above figure from "Entrepreneurial Intentions of Business Students," the factors that influence attitudes towards self-employment and entrepreneurial

intention are illustrated. In analyzing student entrepreneurs, it's useful to note the fourth external factor in figure 1: "University." The university supplies inspiration, training, and networking opportunities for the student. These influencers that are not immediately available to non-students also increase the effectiveness of entrepreneurial activity.

There are many other influencers when attempting to determine entrepreneurial effectiveness. The end effectiveness can be broken down into three categories: "opportunity recognition," "venture creation," and "venture growth" (Cardon et al). These are influenced by multiple behaviors, activities, and cognitions. Cardon et al demonstrates this in figure 2 while also claiming that all of this is driven by "entrepreneurial passion." This passion is described as

> Consciously accessible, intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur"

For student entrepreneurs, this passion is often easily accessible and identifiable given the resources and opportunities that a university environment can provide.


A Conceptual Model of the Experience of Entrepreneurial Passion
Goal-related cognitions
Corresponding to specific entrepreneurial role identities
Entrepreneurial behaviors
In identity-specific activities
Entrepreneurial effectiveness
Corresponding to specific entrepreneurial role identities
Entrepreneurial passion
Consciously accessible, intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur[a]
Goal challenge
Goal commitment
Goal striving
Creative problem solving
Persistence
Absorption
Opportunity recognition
(inventor identity)
Innovativeness
Usefulness
Venture creation
(founder identity)
(assembly of)
Financial capital
Human capital
Social capital
Venture growth
(developer identity)
Sales/profit growth
Market growth
Firm growth
d
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A
B
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Direct effects of entrepreneurial passion on entrepreneur's behaviors that are directed toward fulfillment of evoked role identity
Mediated effects of passion on identity-specific entrepreneurial behaviors that are regulated by goal level (challenge), commitment, and striving
Direct effects of identity-specific behaviors on entrepreneurial outcomes that are posited to be relatively stronger because of identity relevance
Direct effects of identity-specific behaviors on entrepreneurial outcomes that are posited to be relatively weaker because of lack of identity relevance

Figure 2

George Burman, a professor of entrepreneurship at Syracuse's Whitman School of Management, says that one of the advantages a student entrepreneur has is that they do not “have the obligations that somebody 10 years out does, with family and mortgage” (Aubuchon). This not only plays a role in deciding to be an entrepreneur, but also in succeeding. Fewer obligations can result in less distractions and thus more productive time spent on task.

For the student entrepreneurs that founded Reslutions, there were many driving factors that allowed us to successfully drive solutions to solve the aforementioned problems. Robert Caucci and I were both highly motivated to create Reslutions, not only because we were the creators, but because we would also directly benefit as users of the system. While we were solving problems for Pace’s OHRL we were also solving the problems we were facing on a daily basis as residents and resident advisors. This also gave us the benefit of literally living with other target users. Thus, testing, feedback, and even encouragement came with very little effort at all.

Another key characteristic that helped Reslutions was the team. With a small diversely skilled team, quick and smooth execution was possible. Also, Caucci and I lived together in one of Pace’s residence halls during the summer of 2010 when the Reslutions platform was initially developed. This allowed there to be constant communication and meetings to be held whenever needed. Caucci was able to handle most of the business sides of the company, while I developed the technology.

All of which happened in parallel with transparent communication between the two of us. Possibly the most important element for the initial success of Reslutions was the qualifications of this team. Caucci was studying business economics and entrepreneurship and had previously founded another company. Therefore, he had a relatively complete understanding of what was needed to start a company and solve problems. I was studying computer science and becoming increasingly more involved with web development.

The willingness and cooperation of Pace's housing office to work with and try Reslutions' services allowed the student entrepreneurs to avoid the sometimes most difficult process of bringing on the first client. This was only possible because of the unique embedded relation the students had with the client. This relationship and the result of it were because the founders were capable and respected students. If non-students created a similar company in a different context, the same delivery of solutions would have been highly unlikely.

In any situation given the right combination of complementary skillsets, motivation, cooperation, and communication, entrepreneurs can effectively drive solutions. The advantages that student entrepreneurs have are the resources and surroundings that make forming an idea, solution, and team faster and easier.

IV. The Ability of Customized Technology Solutions to Solve Problems

The Reslutions platform was developed in a unique iterative manner. The initial goal of Reslutions was to solve the problems that Pace's OHRL were facing. It was decided by the founders, given the problems at hand and my skillset, that Reslutions would best function as a web based platform. This would prove challenging at times and new technology would be used as it was necessary. The base of the platform was structured around the resident management issue. Following the creation of this base, each individual feature was developed. For every problem that was solved and feature that was added, the technology was customized to meet the exact needs of the client (Pace's OHRL).

A longer-term goal of Reslutions was to provide the same level of customization to other housing departments with a scalable product. The solutions that Reslutions provided had a great deal of customization for Pace. With this considered, there were some tradeoffs. Static customizations that were hard coded resulted in faster development, less testing, and more stability. On the other hand, dynamic customizations that were stored in a database resulted in a more scalable system that the client could customize, but this would increase development time. For these reasons, the early development of Reslutions for Pace consisted of a combination of static and dynamic customizations.

a. The Technology Stack

Reslutions used proven open source and free software to build the custom solutions that Pace needed. On the front end of the web-based platform, there is a combination of HTML, CSS, JavaScript, Java, and Flash. All of these except Java are

the standard when it comes to web interfaces. There were numerous programming languages that could have been used to create the back-end (or server-side) of Reslutions, including Python, PHP, Java, .Net, Cold Fusion, Ruby, and Perl. Given my experience at the time, we decided to use PHP and MySQL for the database.

It should also be noted that a few frameworks and libraries were used in the technology stack. CakePHP is framework for PHP that allows for rapid development and code generation. JQuery is a JavaScript library that is also intended to increase development speed by simplifying and enhancing much of JavaScript's functionality. In addition, "git" was used for version control of all of the code. These tools greatly amplified the productivity of the short development cycles.

To actually deliver the Reslutions web-based platform a server needed to be used. For this, we continued to use the proven, stable, open source standards. The server consisted of Linux for the operating system, Apache for the HTTP server, PHP to run the PHP scripts, and MySQL for the database. This combination is often referred to as LAMP. Also, a tool called Capistrano was used to allow for rapid deployment to any server.

b. Benefits

Starting anything from scratch can be a daunting task, which is why the decisions about the technology stack were all very important. The harmony of all of these technologies together results in several benefits for the company, the developers, and the clients. These benefits are part of the reasons that the specific technologies were chose.

First and foremost, by creating a web-based platform, the information and functions on it become accessible from anywhere with an internet connection. With password authenticated user login, the appropriate information and functionality are only available to those with access. Also, by having users authenticate, every individual then becomes responsible for their actions on the system. This balance of accessibility and accountability immediately does what other solutions weren't able to do for Pace.

The technology behind Reslutions is also running the sites and infrastructures of many large companies. Without any additional research, it is understood that this technology can be scaled reasonably quickly and cheaply to handle thousands of requests per second. That is not always relevant for a new website, but it is always relevant for highly successful websites.

The use of open source languages, frameworks, and libraries creates many benefits. With large communities and support forums, development becomes much easier. Whenever there were any issues, there was always an answer a few clicks away. Having all of these resources at my fingertips meant faster development, deployment, and delivery.

c. Disadvantages

With this technology stack there were a few disadvantages and challenges that were faced. Security is often the biggest concern when it comes to web applications that store sensitive information. There is only so much that can be

reasonably done to secure a server. A server can never be one hundred percent secure, but to-date Reslutions' server has never been knowingly breeched before.

Another challenge that arose with using the decided technology was hardware integration. Typically, websites are not made to interact with any hardware beyond the mouse, keyboard, and sometimes camera and microphone. For Reslutions, this became an issue when solving the mail management problem with the need to accept digital signature. In this case, an additional technology was added to the stack: Java. This programming language (not to be confused with JavaScript), allows for local serial port communication through a Java Applet on the website.

A final challenge that arose with Reslutions' technology stack is one that is nearly always unavoidable: handling increasing levels of complexity. As more features and customizations were added, both the database structure and code became more intricate. This can often result in performance losses and make managing documentation increasingly difficult.

V. Processes and Stages of Reslutions

Despite how many sleepless nights there were spent working on Reslutions, it did not happen overnight. In fact, the development of the company went through multiple stages and phases to get where it is today. Quite a bit of planning was done at different stages to try and manage and predict Reslutions' progress and goals.

However, things did not always go as planned and adjustments were constantly being made.

a. Ideation and Formation of a Team

In the fall of 2009, Robert Caucci and I began working as resident advisors for Pace's Office of Housing and Residential life. After a few short months of experiencing the abovementioned problems and inefficient processes, Caucci saw the business opportunity at hand. Caucci spoke with the Director of Housing to voice his thoughts and initiate a long lasting open dialog. Being non-technical, Caucci realized that he would need the help of some software engineers. At the time, Stiliyan Lazarov and I were also resident advisors in the same building and we were both studying computer science. Caucci approached us with the idea and, following multiple brainstorming sessions, the team was formed.

b. Requirements Gathering

During the spring and summer of 2009, development began on the Reslutions platform using fairly informal agile methodologies. Multiple meetings and interviews were held with Pace's OHRL to determine the needs of the client and the priority of those needs. This allowed the Reslutions team to determine what they should develop first and how it should function. By constantly communicating with the client, the requirements of each feature could be gathered so that no time would be wasted developing unwanted or not needed components.

c. Software Development

Before requirements gathering even began, development of the website commenced. Core functionality of the web-based platform was going to be needed no matter what. This mainly included user authentication functionality and designing the interface. Development was kept very simple and straightforward because nearly all of it was done by myself. The main goal was rapid, reusable, and sustainable code. Because git was used for source control, some interesting statistics can be noticed.

From May 18th, 2010 to March 10th, 2011, 519 commits were made with over 50,000 lines of code written.

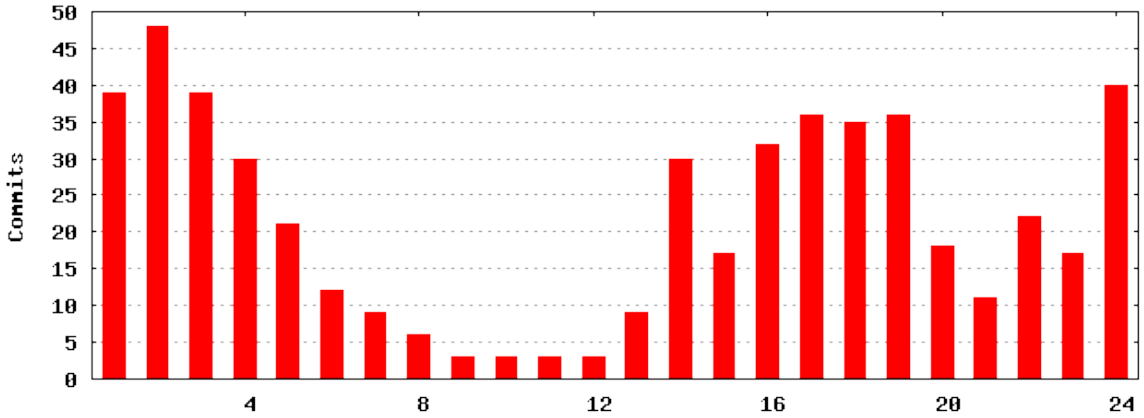

Figure 3: Commits by hour of the day

Figure 3 above shows the number of commits made by hour of the day over time. The majority of work was done in the late afternoon or late at night. This reinforces common assumptions about how student entrepreneurs (especially programmers) work.

d. Testing

In the spirit of agile software development, testing played an important role in the development of the Reslutions platform. Testing was done formally, informally, and on an ad hoc basis. Testers consisted of the actual end users, including myself, Caucci, Lazarov, residents that lived in the residence halls, and staff that worked for Pace's OHRL. This allowed us to find bugs and receive vital feedback about the interface and functionality. Feedback from testing was always taken into consideration as development continued; however discretion was used and changes were not always made based on the feedback.

e. Deploying Releases

After sufficient testing and development, we deployed the latest release to the servers. Deployment was relatively pain free and there were rarely problems. The website was always made as simple and usable as possible, but with major releases or updates user guides and/or in person training were sometimes needed.

f. Feedback and Iteration

Reslutions had a strong focus on user experience because the founders had to use the system we were creating. With that, we had various means of collecting feedback from the users. On the actual website, there were two methods for collecting feedback: 1. A simple contact form and 2. An anonymous suggestion box. Users could also give feedback through email or by calling a phone number that was listed on the website. Feedback was also collected with email surveys, text message polls, and in person interviews. Based on the feedback received, features were iterated, improved, and added.

g. Business Growth

After a year of development and testing of Reslutions with Pace's OHRL, we felt confident enough that it was time to grow the business. Through an introduction made by Pace's Director of Housing, Reslutions began a pilot program with Educational Housing Services (EHS) to solve their mail management problems. The pilot was successful and EHS converted to paying a client.

In October of 2011, Caucci and I exhibited Reslutions at a NASPA Tech conference in Rhode Island. At this conference, there were hundreds of college housing professionals that could have benefited from Reslutions' services. We demoed the platform and many people expressed interest.

VI. Analysis of Areas Where Reslutions Does Not Solve Problems

Reslutions and the student entrepreneurs who founded it were able to successfully solve many of the problems college housing departments have. Unfortunately though, in its current state Reslutions was unable to solve some more complex or indirect problems.

A continually challenging problem that occurred when developing the Reslutions platform was integration with existing systems or software. A specific example of this is the software that Pace's OHRL uses for the general management of rooms, occupancy, and billing. The software is called My Housing Director and is offered by the company Adirondack Solutions (a direct competitor). The database of residents and rooms in Reslutions actually gets updated with an exported roster

from this software. There was no possible way to make this a seamless integration because Adirondack Solutions is a competitor. Also, the residential management portion of the Reslutions was not built out to the extent that it could replace My Housing Director because Pace was in a long-term contract with Adirondack Solutions and didn't need this software replaced.

Another ongoing issue that many college housing departments face is receiving and processing work orders for the residence halls. There are an abundance of services that already solve this issue but it seems that most of them do not completely satisfy the wants and needs of housing departments. It would be appropriate for Reslutions to have a work order solution and many users have requested such. This feature was not added to Reslutions because there was an underlying issue that was not evident to the residents that would be submitting work orders. Each work order that is submitted must notify the appropriate person. In Pace's residence halls, nearly every building used a different work order solution that was managed by a different individual. These individuals were able to handle the current work orders relatively well. If Reslutions were to implement a work order solution, it would require the restructuring of many people's workflows and they would all have to be trained. This would of course be in addition to the actual development work. The cost benefit analysis of this was never convincing enough to make the effort to build a work order solution.

A complex issue for computer science as a whole is the task of scheduling. Solving scheduling problems is also a major issue for college housing departments.

This is mostly pertaining to scheduling the shifts for staff members in a fair manner. The best way to exemplify this is to give the details of a RA duty schedule. In Pace's John Street dorm there are a total of 15 RAs and every night there must be two RAs on duty and one on call. Duty on Friday and Saturday lasts for 24 hours and typically Thursday Friday and Saturday duties are weighted to be worth as much as 1.5 week day duties. Also, holidays are considered special days that should also be distributed evenly. Given these requirements and the limited availability of the staff, a fair balanced schedule must be created. In nearly all cases, this is done with the use of paper, calculators, digital spreadsheets, and trial and error. I actually created a basic solution that was used by me to create the schedule for a few semesters. This solution did not always create the fairest schedule, was not customizable, and had to be adjusted using trial and error for each use. Thus Reslutions could not effectively solve this complex issue.

VII. The Roommate Project

One of the fairly complicated issues that Reslutions was able to solve was the issue of matching compatible roommates. We did this with a product called The Roommate Project. This product digitized and expanded Pace's previous paper based process. This included an easy to use survey pictured below. This survey is the culmination of years of experience dealing with roommates and research about roommate compatibility.

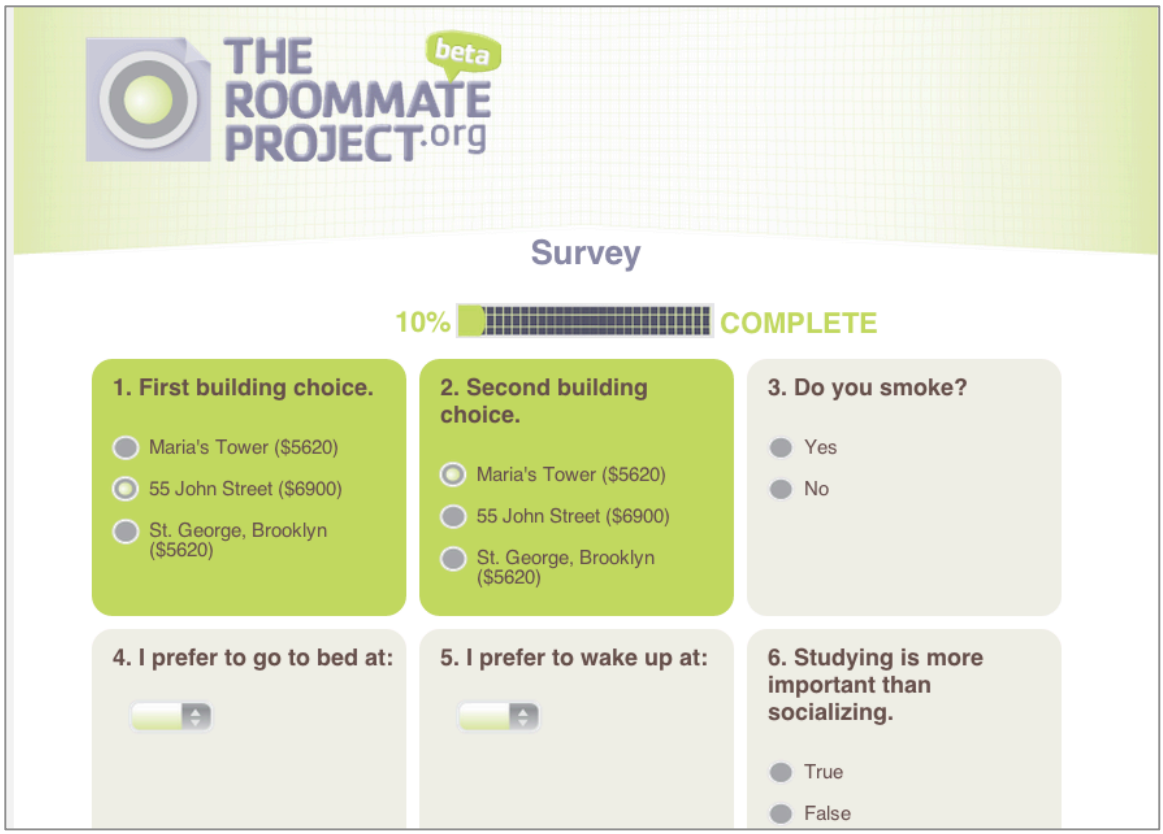

Figure 4

During the summer the summer of 2011 I went to all of the freshmen orientations to inform students about The Roommate Project. Over 98 percent of the 1000 first year students living on campus filled out the survey on theroommateproject.org. Students were allowed to return to the site at any time before the cutoff date to modify their responses.

After the survey was closed a custom intricate matching algorithm was used to match all of the residents in an appropriate manner that properly filled the rooms in the residence halls. This algorithm took several minutes to process the 980 users. When compared to the multiple human hours this processing took before, this was an immense improvement.

VIII. SpaceSplitter

After mediating and experiencing roommate problems and attempting to prevent them with compatible matches, Caucci and I realized the real problem at hand. Roommates tend to communicate ineffectively which leads to the mismanagement of expectations. With this realization of the root problem, Caucci and I found a much larger opportunity.

In January of 2012 we launched a landing page at SpaceSplitter.com to begin capturing email addresses and gaining interest. The goal of SpaceSplitter is to help solve roommate problems by creating a website that facilitates communication, allows roommates to manage the household finances, manage household chores, and collaboratively purchase shared items.

Roommate conflicts are very prominent in university residence halls but are also possible for any roommates of any age. According to the 2012 US Census, there are over seven million households in the United States with roommates. This creates a five billion dollar market opportunity considering the initial services that SpaceSplitter plans to offer.

IX. Reflections & Next Steps

Reslutions has completely revolutionized nearly every process of Pace's Office Housing and Residential Life. With these changes and improvements, over 85% of Reslutions users say that they could not do their jobs without the platform and could not go back to the old systems. This metric is one of the key indicators of

the success of Reslutions. More importantly and less visible are the invaluable skills, connections, and experiences that Caucci and I have gained.

Reslutions is currently a profitable business but it did not get the traction that our initial projections anticipated. This occurred for a variety reasons that were seemingly out of our control. Many housing departments already have long-term contracts with some of our comparably capable competitors. Often times staff that are involved with flawed processes have the attitude of "if it's not broken, don't fix it." Finally, the bureaucratic nature of universities creates a very challenging environment for outside vendors to be approved and implement services.

As for The Roommate Project, we also declare that it was a moderate success. This separate system digitized an inefficient time consuming process. There is a very large number of people that use online roommate finding and matching services today. That being said, this market is already saturated with dozens of direct competitors. A sustainable advantage and appropriate business model are very difficult to come by.

Creating Reslutions and The Roommate Project provided Caucci and I absolutely invaluable knowledge and hindsight. We think that these experiences will allow us to create a highly profitable, successful, and valuable company with SpaceSplitter. With the lessons we have learned and the relationships we have established, we plan to move forward with SpaceSplitter and solve roommate problems for good. The steps we will take moving forward will follow a very similar

path that we took with Reslutions. However, with the consumer market we are approaching there will be a stronger focus on marketing.

X. Conclusion

The entrepreneurial journey from Reslutions to The Roommate Project to SpaceSplitter has been quite the evolutionary process, both professional and personally. Starting Reslutions as a second year computer science major provided one of the most beneficial, out of class, learning experiences possible. Before Reslutions, I had built just a few websites and was not very proficient. As Reslutions progressed so did my skills and abilities as a software engineer.

Through building Reslutions, Caucci and I learned the value of executing. In fact, I believe that executing is the most important aspect for any entrepreneurial venture. With that in mind, Caucci and I were able to quickly and effectively execute our solutions for The Roommate Project. This more complex problem even further improved my skills and knowledge of software engineering and building a business.

The personal development that occurred for me is something that anyone could and should experience. The process is relatively simple, replicable, and follows the entrepreneurial model. Students need to learn the basics and foundations of computer science, find unique problem, form an interested team, and execute on a solution. Then the process should be repeated with a more challenging but related problem with the same time. Doing this is likely to result in one or more successful potential businesses.

The above assumption is based solely on the experience and the findings of one group of entrepreneurial students. The true test for us is will be the results of executing on our solutions for SpaceSplitter. A potential future study would be to compare the results of my entrepreneurial endeavors to students with similar experiences. A longer term, more experimental in-depth, study would be to immerse students in a similar environment in a university setting. All in all, a positive experience and viable solutions are bound to come out a small group of diverse entrepreneurial students that focus on technology.

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